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Appropriate and inappropriate utilization of a county hospital emergency department/trauma center

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APPROPRIATE AND INAPPROPRIATE UTILIZATION OF A COUNTY HOSPITAL EMERGENCY DEPARTMENT/TRAUMA CENTER

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ABSTRACT

APPROPRIATE AND INAPPROPRIATE UTILIZATION OF A COUNTY HOSPITAL EMERGENCY DEPARTMENT/TRAUMA CENTER

By Deanna Domeier Wolf

Appropriate and inappropriate patient utilization of a county emergency department/trauma center was studied using a retrospective, descriptive design. Data were collected from 475 patient charts on 6 Monday's during May, June, and July of 1990. A triage tool was utilized to divide patients into emergent and urgent categories (appropriate utilization) and a nonurgent category (inappropriate utilization).

Fifty two percent of the patients utilized the emergency department appropriately, 48% utilized it inappropriately. The typical patient was English-speaking, Hispanic, male, and between the ages of 21-50 years. He arrived by automobile, was likely to have a medical complaint of pain, had prior visits to the emergency department, was unemployed, uninsured, and resided in the same city as the emergency department.

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This thesis is dedicated to my grandmother, Eleanor Keim Domeier. She once wrote me in a letter that she had wanted to become a nurse, but did not have the money, so instead, she was nothing.

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Chapter 1

INTRODUCTION

This was a retrospective, descriptive study of the utilization of an emergency department. Studies concerning the "appropriate" utilization of emergency departments were initially published by Shortliffe, Hamilton, and Marion in 1958. Since that time, a proliferation of studies have addressed this topic citing multiple factors associated with the increased utilization of emergency departments. This study concentrated on the appropriate versus inappropriate utilization of the emergency department as measured by the criteria for emergent, urgent, and nonurgent care.

In large cities and small towns across the nation, the use of the emergency department is inappropriate. Overburdened, understaffed, and under-financed, emergency departments are impacted by this misuse. Several factors combine to affect the emergency department: (a) an estimated 37 million patients who have no health insurance; (b) an older population with a growing need for expensive treatment; (c) ineffective government reimbursements, which often cover only half the cost of treating the poor; (d) the effects of the autoimmune deficiency syndrome epidemic; and (e) the ever growing population of patients who utilize the emergency department for nonurgent care (Gibbs, 1990). This study will focus on the last factor, inappropriate utilization of the emergency department.

In 1980, it was estimated that 85% of the 31.9 million hospital emergency department visits were for non-life-threatening conditions (Peisert, Cross, & Riggs, 1984). In the United States, the total number of emergency department visits increased 400-fold from 1940 to 1955 and continues to escalate. The

number of patient visits to emergency rooms between 1962 and 1976 increased from 20 million to 77 million (Benz & Shank, 1982). Today more than 90 million Americans visit hospital emergency departments each year (Williams, 1992). Inappropriate utilization of emergency departments affect the health care of both the individual patient and the nation, and contributes to the rising cost of health care. Crippen (1985) estimated that services rendered in an emergency department are three times more costly than identical services rendered in the office of a family physician. Fleming and Jones (1983) found that the average cash amount for an outpatient department/emergency department visit in the Texas area was $51, while the estimate was $28 for private office, clinic, and home visit. By virtue of its technology, the emergency department is a facility custom-designed to effectively treat specific emergent and urgent problems. The expensive overhead of this technology effectively prohibits economical treatment of nonurgent disorders which do not require such use.

According to Davidson (1978), it is probable that this resultant overextension and inappropriate utilization of emergency departments will seriously jeopardize patient care and treatment. The lack of continuity of care, the fast pace of the emergency department, and the potential for duplication of services combine and cause results that can be detrimental to the patient. Emergency services are a poor substitute for family practice in terms of cost effectiveness and follow-up for a large number of nonurgent ambulatory complaints. A valid substitute for routine care patients receive through emergency departments should be instituted to curtail continued cost escalation and control the future of medical services (Roth, 1971).

Problem Statement

The overburdening of emergency departments nationwide has led to an unfortunate side effect; many hospitals are dropping out of the trauma network, or substantially reducing the scope of their emergency services (Gibbs, 1990). The impact of this overburdening is detrimental to the entire medical system. When emergency departments succumb to treating primarily the nonurgent problem, it is no longer possible to effectively care for the victim with urgent and emergent problems (e.g., myocardial infarction, trauma). One of the answers to this problem may be to relocate the nonurgent patient out of the emergency department into a more cost-effective environment. The emergency department is not the appropriate location for the treatment of nonurgent problems.

Purpose

The purpose of this research was to determine whether a county hospital's emergency department /trauma center located in northern California was utilized appropriately or inappropriately by the patient population on selected Mondays between the hours of 0001 to 2300. Additionally, the results of this study will add to the existing body of literature regarding emergency department utilization. Ultimately, recommendations may be generated from this study regarding the overall delivery of health care services.

Research Questions

The data gathered provided information specific to a county hospital's emergency department/trauma center. Research questions were:

1. How is the county hospital's emergency department/trauma center utilized during selected Mondays between the hours of 0001 to 2300, appropriately or inappropriately?

2. What is the demographic profile of the patients who utilize the county hospital's emergency department/trauma center appropriately (male, female, ethnic background, age)?

3. What is the demographic profile of the patients who utilize the county hospital's emergency department/trauma center inappropriately (male, female, ethnic background, age)?

Definition of Terms

For the purpose of this study, the following definitions apply:

1. An emergent condition is life or limb threatening; unstable vital signs may exist and a time delay would be harmful to the patient. The patient must go immediately into the emergency department, by-passing registration (Medical Center Protocol, 1990).

2. An urgent condition is a potentially serious, but not life threatening condition, and requires treatment in 1-2 hours. The patient is registered and takes the next available space in the emergency department (Medical Center Protocol, 1990).

3. A nonurgent condition may wait for care. The patient is stable but should be seen the same day that he/she is seeking care. These patients will be asked to wait for registration and will eventually be seen in order of arrival after emergent and urgent patients (Medical Center Protocol, 1990).

4. Appropriate utilization is the use of the emergency department for emergent and urgent conditions (Bielen, 1980).

5. Inappropriate utilization is the use of the emergency department for nonurgent conditions (Bielen, 1980).

Chapter 2

CONCEPTUAL FRAMEWORK AND REVIEW OF THE LITERATURE

Conceptual Framework

The concepts on which this research was based were derived from the literature which cited increased inappropriate utilization of the emergency department by the patient population for primary care. Access to health care by low-income Americans has been of considerable concern for the last two decades. Of significant importance has been the finding that poor individuals are less likely than persons of more substantial means to have a regular (primary) source of care. Thus, for a variety of institutional and economic reasons, these persons are more likely to use emergency departments instead of private physicians for their basic (primary) medical care (Hurley, Freund, & Taylor, 1989). Following will be a summary of the definition of primary care and a discussion of why the current emergency department desing is not an effective environment to obtain primary care nor a substitute in any form for the true implementation of a primary care system.

Zander (1980) defines primary care as:

> Care which may be initiated by the client or provider in a variety of settings and which consists of a broad range of personal health care services including: (a) promotion and maintenance of health, (b) prevention of illness and disability, (c) basic care during acute and chronic phases of illness, (d) guidance and counseling of individuals and families, and (e) referral to other health care providers and community resources when appropriate. In providing such services (1) The physical, emotional, social, and economic status, as well as the cultural and environmental

> background of individuals, families, and communities (where applicable) are considered; (2) The client is provided access to the health care system; and (3) A single provider or team of providers, along with the client, is responsible for the continuing coordination and management of all aspects of basic health services needed for individual and family care (p. 282).

Milio (1983) refers to primary care as:

> First-contact care, the kind provided to people when they enter the health-care system. It is comprehensive, dealing with a wide range of health problems and using a broad array of modes of care. It is coordinative, linking patients with more-specialized services when necessary, and it is continuous, ideally maintaining a lifelong tie with individuals (p. 21).

Mauksch (1981) further defines primary care as "...principally ambulatory, community based care. Primary care is characterized by first and continuous access, comprehensiveness, coordination, continuity, and accountability" (p. 1).

The references to and definition of primary care in the literature are extensive. These references generally present three fundamental aspects of primary care that are repetitive in their discussions: (a) health promotion and maintenance, (b) continuity of care, and (c) referral and follow-up care. The majority of emergency departments do not focus on either health promotion or maintenance as it pertains to the patient. Instead, the focus is generally on treating the specific presenting medical complaint. Eradication of those specified signs and symptoms manifested by the patient is the overall goal. Conversely, there have been some programs in emergency departments around the country that have initiated patient education programs and/or some preventative aspects of care. Several articles have been published in the past

few years reporting the successful results of various emergency department-based, injury-control programs (Stockwell, 1991). Dr. Edward Bernstein advocates that "Emergency physicians can play a critical role in public education and prevention involving occupational and sports injuries, trauma associated with handguns, motor vehicle crashes, alcohol and substance abuse, burns, poisonings, child abuse and domestic violence" Bernstein's study (cited in Stockwell, 1991, p. 22).

Continuity of care is an aspect of primary care that has not been addressed in many emergency departments. Once the patient's presenting complaint is evaluated and treated by the emergency department staff, the patient is released from the department with referral to seek "continuity of care" in the medical environment outside of the emergency department. Patients are routinely referred to local family practice physicians, pediatricians or any of the other medical specialties depending on the patients current needs. Should the patient return to the emergency department at a later date with a similar or different medical complaint there is no attempt to provide continuity of care. Often the patient will not be seen by the same physician that initially provided treatment. Additionally, duplication of care is an issue as frequently patient's medical records are not requested or unavailable for emergency department use. Ultimately, the patient will again leave the emergency department with a referral to another specialist in the community. No continuous or coordination of patient care is initiated.

Referral and subsequent follow-up care for patients is another ambiguous area of primary care when attempted through the emergency department. As stated previously, patients are given referral for local, community based

specialists upon discharge from the emergency department. There is, however, no system intact to insure that the patient actually sought care through their referral or even adhered to the basic discharge instructions initiated in the emergency department.

Based on this discussion it can be concluded that patients currently are unable to receive adequate primary care through emergency departments. Those emergency departments that are providing some form of health promotion through education are the minority. Emergency departments do not provide for continuity of care nor do they focus on referral and follow-up care for their patient population.

Review of the Literature

A proliferation of publications relating to the inappropriate utilization of emergency departments have inundated the medical literature over the past 40 years. These publications run a gamut of various topics. The following will be a review of this literature divided into five categories: (a) general utilization of the emergency department, (b) options to emergency department care, (c) patient attitudes concerning emergency department utilization, (d) emergency department care as it relates to Medicare/Medical, and (e) emergency department as a place for nonemergent care.

General Utilization of the Emergency Department

The majority of the published literature concentrates on the subject of general utilization of the emergency department. Roth (1971) studied emergency services in 5 hospitals in the northeast and western United States. Two time periods, spread over 2-3 month periods, were spent in each emergency department. Observations were made on all days of the week and

all hours of the day and night. Results showed few trauma (emergent) and few urgent cases. Most patients utilizing the emergency department lived near the emergency department. Additionally, he found differences between rural versus urban utilization of the emergency department. The urban public hospitals had trauma cases constituting a minority of the patients on the emergency service with a range of 8% to 49%. Outlying, suburban, and small town hospitals tended to have a higher proportion of trauma cases with a range of 57% to 77%. The majority of patients utilizing the urban facilities stated they had no private physician (less than 15% mentioned private physicians). The two rural facilities had greater than 75% of their patients listing a private physician. A large proportion of those patients had come to the emergency department upon the referral from their private physician. Cue and Inglis (1978) reported that patients' use of emergency services and the perceived urgency of their medical condition varied greatly among hospitals. These researchers surveyed 20 hospital emergency departments in hospitals in the Washington, District of Columbia area, which served 750,000 patients annually and found that the number of patients visiting urban emergency departments were three times greater than the numbers visiting suburban emergency departments for equivalent populations. However, patients visiting suburban emergency departments had more acute symptoms.

Ullman, Block, and Stratmann (1975) studied the emergency department of a 367-bed community hospital located in Rochester, New York. A random sampling of 750 chart audits were selected from the 46,527 visits listed on the emergency department logs covering a 12-month period. It was concluded that the vast majority of patients who used the emergency department did so

infrequently, and a large number of "high-frequency" users were black, low-income and lived in inner-city areas. Additionally, the researchers found that over 50% of the hospital inpatient admissions and inpatient days were generated by patients who had at least one emergency department visit during the studied period. Gibson (1978) found similar results; his research was conducted in Buffalo, New York, where chart reviews of all patients treated in all hospital emergency departments during four, 1-week periods were conducted with subsequent interviews. Statistical analyses on 24,594 emergency department medical records and 888 patient interviews subsequently conducted indicated that inappropriate utilization of the emergency department was particularly high for nonwhites (67%), females (52%), low income groups (59%), and patients under 18 years (61%).

Davidson (1978), in searching the literature for a coherent reason for the increase in the volume of emergency department visits, found that much of the usage was for conditions which could be treated appropriately elsewhere. Additionally, he found differences in the utilization patterns depending on the type of community in which the hospital was located. The largest categories were self-referrals and multiple users living closer to the hospital. In addition, there were more patients who were nonwhite, from a lower socioeconomic class and with no private physician.

In another review, Hansagi, Norell, and Magnusson (1985) studied the emergency department of a 1000-bed university hospital located in Stockholm, Sweden. Sweden's registration, "Main File," was utilized to assemble a 10% population sample of persons born on specific days of the month and who resided in the area studied for a 1-year period. The researchers compared

individuals within the population sample who had no emergency department visit within the year studied and those who had 1, 2, 3, or 4 or more visits. Results indicated that emergency department visits predicted hospital care utilization in a 5-year follow-up of this 10% population sample.

Worth and Hurst (1989) studied a medium-size emergency department serving a large industrial town (280,000). New patients attending the emergency department on alternate days were surveyed for a 4-week period. Unlike Gibson (1978), these researchers found that males outnumbered female patients in all age groups except the 70-plus age group; however, the largest was the 20-29 age group. Additionally, utilization was higher on the weekend and more people attended in the early hours of Friday, Saturday, and Sunday. A higher number of younger and older attendees came from more densely populated areas. Overall, 14% were inappropriate visits and 24% of the population studied did not seek care on the day of the incident/accident.

Conversely, Parboosingh and Larsen (1987) studied 75 randomly selected, non-institutionalized persons aged 65 years and older in a large city in Canada and found that about 50% of elderly patients coming to the emergency department did so appropriately. The elder's decision to use the emergency department was preceded by an attempt to contact the family physician by more than one half of the participants. A second study concerning the use of the emergency department by the elderly (Gupta, Setty, & Joshi, 1985) showed that, of the 1,026 elders studied in a 3-month prospective study, the elders constituted 9.8% of the total emergency department attendance but formed 36.5% of all admissions.

Options to Emergency Department Care

Moore, Bernstein, and Bonanno (1972) studied the effect of a neighborhood health center on hospital emergency department use. They utilized a hospital in Charleston, Massachusetts with predominantly middle- and low-income residents and concluded that there were no changes in the level of utilization of the emergency department by the community post implementation of the neighborhood health center. In another study, Kelman and Lane (1976) evaluated two groups of emergency department patients, one group who had a primary care physician and another group who did not. The group without their own physicians were more recent residents in the area, the household heads were younger, the families were smaller in size, and the family member seeking care was typically an adult. Additionally, this group had more frequent illness, whereas patients with physicians typically presented themselves to the emergency department as post-accident victims. Those patients with a physician also stated that they came to the emergency department for one of the following reasons: (a) their physician had referred them, (b) their physician was not available, or (c) their (the patient's) perceived urgency of the problem.

Patient Attitudes Concerning Emergency Department Utilization

Walker (1975) surveyed patients regarding use of the emergency department of a 200-bed community general hospital in Oklahoma City, Oklahoma. Data were gathered over a 28-day period via interviews of 542 patients (sample represents 35% of patient's entering emergency department). The results showed that patients with two or more visits to the emergency department had a more traditional attitude, while patients with less than two visits had a contemporary attitude. Another survey of patient attitudes

concerning the emergency department was conducted by Stratmann and Ullman (1975) who studied 521 households in Rochester, New York (representative of 580,000) and reported that most patients viewed the emergency department as a place to obtain medical treatment when other sources were not available.

Wabschall (1983) studied the emergency department of a 310-bed pediatric hospital in Columbus, Ohio questioning 59 parents. She found that low-income, unmarried mothers with more than one child utilized the emergency department more frequently. These parents utilized the emergency department for the following reasons: (a) accessibility of the emergency department, (b) availability of superior quality of care, and (c) proximity to the emergency department (78% of the sample population lived within 15 minutes travel).

Emergency Department Care Related to Medicare/Medical

Steinmetz and Hoey (1978) studied the impact of the introduction of Medicare (universal health insurance) in Quebec, Canada on hospital emergency departments. Post implementation of the Medicare (universal health insurance) program, the emergency department visit rate increased 14% per year compared to a 7% per year increase in the 5 years preceding Medicare (universal health insurance). Nelson, Nelson, Shank, and Thompson (1979) also concluded that Medicare patients studied in Cedar Rapids, Iowa, had a greater tendency toward inappropriate utilization of the emergency department when compared with non-assistance patients. Of the 304 families studied, 73 families had multiple visits, and 31% of the total visits were unnecessary. The National Medical Care Utilization and Expenditure Survey

(Hurley, Freund, & Taylor, 1989) showed that persons residing in the United States with incomes of less than $5,000 had about 20% of their visits to the emergency department, as compared to those with incomes over $25,000 who utilized the emergency department only 9% of the time.

Emergency Department as a Place for Nonurgent Care

Brook and Stevenson (1970) studied 141 patients in a Baltimore, Maryland emergency department. These researchers found that, by every criterion included in their study, nonurgent medical care delivered in the emergency department was both inefficient and inadequate. Effective care was delivered to 27% of the patients, ineffective care to 60% and neither effective nor ineffective care to 13%. These researchers concluded that a relatively low quality of care is clearly provided at considerable expense. Spasoff, Lane, and Steele (1977) report that the cost of services rendered in an emergency department was not higher than the cost of services rendered in the physician's office. Additionally, these same researchers found that overall, the quality of care was considered adequate in 53% of the emergency department cases as opposed to only 40% of the emergency cases in family physicians' offices. Based on these findings, one might assume that the emergency department could be an appropriate place for the patient to seek care for a nonurgent condition.

Brook, Berg, and Schecter (1973) studied 116 patients seen in the John Hopkins Hospital Emergency Department in Baltimore, Maryland. In general, this group represented a poor, inner-city, black population, 31% of whom were unemployed. Quality of care was judged acceptable by 25%, and results were similar to those reported in the study by Brook and Stevenson (1970) in the same city on a demographically different population. Conversely, Spasoff,

Lane, and Steele (1977) concluded from their study of 352 patients that 53% of those studied received adequate care for a nonurgent condition in the emergency department. These researchers suggested that the emergency department could be an appropriate setting for care of the nontraumatic illness. Given the excellent record of well-staffed emergency departments in caring for real emergencies and the convenience they offer for routine problems, one might conclude as did a recent article, "Perhaps we should stop asking why people come to an emergency department and instead ask why anyone gets his care anywhere else" (Schroeder, 1979, p. 68). Schroeder (1979) additionally suggests that perhaps we should also recognize the emergency department as a potentially new alternative and effective provider of primary care as we know it today.

In summary, the majority of the literature cited supported the fact that the emergency department is frequently utilized for treatment of inappropriate conditions. However, there were a few isolated articles reviewed that did indeed view the emergency department as an appropriate place for all patient care.

Chapter 3

METHODOLOGY

Sample and Setting

This study design was descriptive and retrospective. Observations and measurements were made of charts which included existing states, conditions, behaviors, or characteristics (Polit & Hungler, 1978). Additionally, it was a replication of several preceding studies.

The emergency department in which this study was conducted is located in a northern California county. The county constitutes a land mass of 1,293 square miles and is populated with approximately 1,497,577 persons per the 1990 census (Census of Population and Housing, 1992). This same census defined the population as 69% White and 31% Black and other. Median household income was $48,115 with 7.5% of the population living below the poverty level (Census of Population and Housing, 1992).

The county hospital is a 350-bed hospital utilized by a wide variety of patients. The hospital has several specialty areas, including a regional burn center, a regional poison center, a Level III Neonatal Intensive Care Unit, a renowned rehabilitation program, which includes comprehensive spinal cord and head injury care, and a high-risk pregnancy program. The emergency department is a 32-bed trauma center with two helipads. The 24-hour emergency department is associated with a walk-in clinic, which is open from 0800 until 2200, 7-days-a-week. This combined unit treated 80,000 patients in 1989 (County Hospital Center Guide, 1990). The patients utilized for this study were seen in the emergency department on selected Mondays during the

months of May, June, and July, 1990. Mondays were selected because they were convenient for the researcher. The researcher collected the data from charts located in the registration office from 1500 until 2300. This time frame was chosen because it was convenient for the registration clerks. The day shift was considered too hectic to have an extra individual in the office collecting data, and the night shift would not have provided adequate charts for collection of data. A random sample of days was initially attempted through the county hospital's records department. The researcher was not allowed to enter the records department. Submission of lists of patients' medical record numbers to the clerks was required for the study. Unfortunately, the researcher was advised that patient records would always be relegated to the bottom of the list of tasks for the clerks to accomplish. This was due to the large number of charts that had to be pulled for patient appointments, patient admissions, and those charts requested by physicians, interns, residents, medical students, and in-house staff for other ongoing research/projects. Conducting further research on a random sample would prove beneficial.

Research Design

This study sample was nonrandom, descriptive, and retrospective. Observations or measurements were made of charts which included existing states, conditions, behaviors, or characteristics (Polit & Hungler, 1978). This study followed Beilen's (1980) thesis entitled Appropriate and Inappropriate Nighttime Use of a Metropolitan Emergency Room. Beilen (1980) studied 100 charts collected from a large metropolitan hospital in 1979 between the hours of 2300 and 0700. Additionally, this study followed McLaughlin's (1982) thesis entitled Appropriate and Inappropriate Use of a Selected Emergency

Department. McLaughlin (1982) studied 200 charts collected from a private hospital emergency department in 1980 during 24-hour periods. This study differed from both Beilen's (1980) study and McLaughlin's (1982) study because it was nonrandom, reviewed a larger number of patient records, and utilized priority classifications that were previously established. Findings from a single retrospective study are rarely convincing and require replication with varied samples (Polit & Hungler, 1978).

Procedure

The data collection was initiated after permission to enter the emergency department registration area was granted by the supervisor of the emergency department (Appendix A) and the Human Subjects Institutional Review Board, San Jose State University (Appendix B). The research was divided into four phases: (a) development of a data collection form, (b) actual data collection, (c) categorization of data, and (d) data analysis.

Development of a Data Collection Form

The initial data collection form utilized by Bielen (1980) was revised to incorporate collection of additional data (Appendix C). Deleted from Bielen's (1980) original form were: (a) the usual source of care, and (b) advice and follow-up. Changes to Bielen's (1980) original form were: (a) "brought by" was changed to "mode of arrival", (b) "time admitted" was changed to "total emergency department time", (c) "signs and symptoms" at triage were changed to "medical complaint", (d) "priority number" was changed to "classification of care" and "category of care", (e) "history" was changed to "medical history" (f) "laboratory, x-ray, and treatment" were changed to "services rendered", and (g) "diagnosis" was changed to "physician diagnosis." Additions to Bielen's

(1980) original form were: (a) language spoken, (b) chart availability, (c) previous emergency department visit, (d) city of residence, and (e) employment status. No formal testing was done to establish validity of the tool, instead, to establish content validity, the data collection form was informally reviewed by several emergency department employees (an emergency department physician, a physicians' assistant, and approximately 8 emergency department nurses). The data collection form was piloted on random charts to ensure functionalism. Data collected were specific to the sampled visit and included: (a) mode of arrival; (b) medical complaint; and (c) patient characteristics, such as age, sex, ethnicity, language spoken, and medical history. Additionally, services rendered to the patient in the emergency department were documented such as: (a) admission, (b) consultation, (c) laboratory tests, (d) physician only, (e) medication, (f) referral, and (g) x-ray. Total emergency department time from triage to admission or discharge was documented, as well as: (a) physician diagnosis, (b) patient chart availability, (c) previous emergency department visits, (d) city of current residence, (e) insurance status, and (f) employment status.

Data Collection

The data collection was initiated after permission to enter the emergency department registration area was granted by the supervisor of the emergency department (Appendix A) and the San Jose State University Human Subjects Institutional Review Board (Appendix B). A standardized form was utilized to collect data (Appendix C). Data were specific to the sampled visit and included: (a) mode of arrival; (b) medical complaint as presented to the triage nurse (to include symptom duration, intensity, and vital signs); and (c) patient

characteristics, such as age, sex, ethnicity, language spoken, and medical history. Additionally, services rendered to the patient in the emergency department were documented such as: (a) admission, (b) consultation, (c) laboratory tests, (d) medication, (e) physician only, (f) referral, or (g) x-ray. Total emergency department time from triage to discharge or admission was documented, as well as: (a) physician diagnosis, (b) patients chart availability, (c) previous emergency department visits, (d) city of current residence, (e) medical insurance status, and (f) employment status. Classification of care was initially attempted with the Emergency Department's Guidelines for Triage (Appendix D). Unfortunately, these guidelines were found to be inadequate for processing the data. Too frequently these guidelines were incomplete, vague, or omissive of material necessary for specific data classification. The researcher, instead, adapted criteria from several existing sources (Bielen, 1980; Molitor, 1992; Rund & Rausch, 1981) to develop a simple triage tool that simplified data classification (Appendix E). Based on these amended guidelines, priority classifications were determined and patients were further classified into an appropriate or inappropriate category of care.

Data collection took place on selected Mondays between the hours of 1500 and 2300. The Monday's were selected solely for the convenience of the researcher's schedule as being the best available time to review charts. The Monday's included were May 7, May 14, May 21, May 28, June 18, and July 2, 1990. Any patient record that was registered after 0001 and discharged prior to 2300 on the selected Monday was eligible for collection. The researcher collected data from patient charts and loose emergency department paperwork that entered the registration area post discharge of the patient. There was no

patient contact as the registration area utilized for collection was separate from the emergency department and staff. Data were ultimately collected from 475 patient charts (47% of the total patients) that were available to the researcher. There were 1,002 total patients seen in the emergency department on those 6 Mondays. Data were collected on a one page data collection sheet (Appendix C). Emergency department patient charts were systematically reviewed, and the pertinent data was obtained from them, and recorded on the data collection sheet. Data were categorized at a later date.

Categorization of Data

Specific categorization of each patient's visit as appropriate or inappropriate utilization of the emergency department was made by using a priority classification system. Criteria adapted from several existing sources (Bielen, 1980; Molitor, 1992; Rund & Rausch, 1981) and from the researcher's own experience were utilized to develop the tool (Appendix E). This tool allowed the researcher to classify each patient based on his/her presenting medical complaint into a category of emergent, urgent or nonurgent. Patients utilizing the emergency department for emergent and urgent medical conditions were categorized as using the emergency department appropriately. Patients utilizing the emergency department for nonurgent medical conditions were categorized as using the emergency department inappropriately.

Data Analysis

The data were analyzed by descriptive statistical methods utilizing both frequency and percentages presented in a narrative and graphic form. Descriptive statistics are used to describe and synthesize data obtained from empirical observations and measurements (Kuzma, 1984). A retrospective

study approach was used to demonstrate manifestation of existing phenomenon as linked to other phenomena occurring in the past (Polit & Hungler, 1985). As in medical research, retrospective studies are quite prevalent in nursing research.

Chapter 4

FINDINGS AND INTERPRETATION

The data from the study provided characteristics descriptive of the patients who utilized the county emergency department/trauma center on selected Mondays during the months of May, June, and July 1990. These findings are further classified into two categories: (a) characteristics of the sample (demographic data), and (b) priority classifications, to include emergent, urgent and nonurgent patient categorization. The priority classifications served to further delineate the appropriate and inappropriate utilization of the emergency department. It should additionally be noted that not all of the data originally collected were analyzed.

Characteristics of the Sample

There were 80,000 patients seen in the emergency department during the year 1989 (the year previous to the year studied). During the 6 Mondays studied, there were a total of 1,002 patients checked into the emergency department. The researcher reviewed 475 of the original 1,002 patient charts. The data analysis and interpretation relate only to these 475 patient charts.

Mode of Arrival

There were seven different modes of arrival that patients utilized; patients arrived by ambulance, automobile, bus, police car, wheelchair with emergency psychiatric services, taxi and on foot. A full 94 % of patients arriving by ambulance utilized the emergency department appropriately. Patients who utilized a more "complicated" form of transportation (bus, taxi, walking) were far more likely to utilize the emergency department inappropriately (Table 1).

Table 1

Mode of Patient Arrival to the Emergency Department as Presented by Appropriate Versus Inappropriate Utilization (N = 446)

Mode of Arrival	Number	Number Appropriate	% Appropriate
Auto	306	153	50
Ambulance	62	58	94
Custody	36	17	47
Bus	22	6	27
Walk	12	3	25
EPS	4	2	50
Taxi	2	0	0
Total	446	239	54

Medical Complaint

Due to the extensive number of differing presenting medical complaints, only those complaints with the highest frequency were analyzed. Statistical analysis of 325 patients (comprising 68% of the total patient population) presenting with 18 different medical complaints was accomplished (Table 2). There were some medical complaints that were appropriate 100% of the time. Vaginal bleeding, suturable lacerations, shortness of breath, trauma, seizures, allergic reactions, and overdoses were appropriate 100% of the time for all patients. Conversely, there were some medical complaints that were inappropriate 100% of the time. Back pain, clearance for detoxification, rashes, and coughs were inappropriate 100% of the time for all patients.

Age

As indicated in Table 3, a full 64% of patients utilizing the emergency department were in their "middle years," between the ages of 21 to 50 years. Of the total 302 patients in this age group, 46% (140 patients) were unemployed, and 58% (175 patients) were uninsured. It could be hypothesized that the remainder of these patients, being in their "productive" years, may be employed and/or caring for children at home and found it difficult to schedule an appointment with a physician. This would leave the emergency department's convenient 24-hour availability a valid alternative for them. Additionally, and again related to their productivity/activity, they may be a group at risk for injuries related to on the job and/or recreational activities.

Either end of the curve, the "younger years" (ages birth to 20 years) and the "older years" (ages 51 to 90 years) was represented equally. Each of these groups represented 18% of the total emergency department utilization.

Table 2

Appropriate Emergency Department Utilization by Medical Complaint (N = 325)

Medical Complaint	Number	Number Appropriate	% Appropriate
Abdominal Pain	39	34	87
Clear for Custody	36	17	47
Extremity Pain	33	12	36
Head Pain/Ache	31	9	29
Chest Pain	30	24	80
Shortness of Breath	29	29	100
Laceration	19	19	100
Clear for Detox	19	0	0
Vaginal Bleeding	17	17	100
Trauma	16	16	100
Rash	11	0	0
Seizure	10	10	100
Fever	9	2	22
Cough	8	0	0
Drug Overdose	7	7	100
Allergic Reaction	4	4	100
Nausea/Vomiting	4	1	25
Back Pain	3	0	0
Total	325	198	61

Table 3

Utilization of the Emergency Department as Presented by Age (N = 473)

Age (Years)	Number	% Total Utilization
< 1	18	4
1-10	20	4
11-20	49	10
21-30	145	31
31-40	100	21
41-50	57	12
51-60	30	6
61-70	41	9
71-80	8	2
81-90	5	1
Total	473	100

Those patients under the age of 1 year (total patient number 18) utilized the emergency department inappropriately 89% of the time. The researcher was unable to determine from patient records whether the majority of these patients were the first born children to inexperienced parents or the children of parents who had not been adequately educated concerning benign childhood illnesses or other factors.

Conversely, the oldest group of patients studied, ages 81 to 90 years (N = 5) utilized the emergency department appropriately 100% of the time (see Table 4). Perhaps advancing age proves a reliable predictor of a greater severity of illness, or maybe the elderly were reluctant to use the emergency department until they were very ill.

Sex

The data indicated that more men then women utilized the emergency department. Men were also found to utilize the emergency department more inappropriately; only 48% of their total 256 (54% of the patient population collected) individual visits were documented as appropriate. Female patients totaled 217 (45% of the patient population collected) and utilized the emergency department appropriately 58% of the time. This information differs from Gibson (1978), whose study identified females as 52% of the emergency department population, but it does concur with Worth and Hurst (1989), who found that males outnumbered female patients.

Ethnicity

Data collected regarding ethnicity were incomplete. Only 217 of the total 475 patients' charts had documentation of ethnic background; 258 were listed as unknown. Analysis of those 217 documented charts portrayed the patient

Table 4

Appropriate and Inappropriate Utilization of the Emergency Department as Presented by Age (N = 472)

Age (Years)	Appropriate	Inappropriate	% Appropriate
< 1	2	16	11
1-10	11	9	55
11-20	31	17	65
21-30	73	71	51
31-40	42	58	42
41-50	34	23	60
51-60	18	13	58
61-70	27	14	66
71-80	5	3	63
81-90	5	0	100
Total	248	224	

who utilized the emergency department as 49% Hispanic, 30% Caucasian, 6.5% Black, and 6.5% Vietnamese. The census data for the county lists the population as 69% white and 31% Black and other (Census of Population and Housing, 1992). Several studies cite nonwhite patients as being frequent emergency department patients. Ullman, Block, and Stratmann (1975) found Blacks to be "high-frequency" users; Gibson (1978) cited nonwhites as 67% of the inappropriate emergency department visits, and Davidson (1978) also found that there were more patients who were nonwhite utilizing the emergency department. Refer to Table 5 for further delineation of emergency department utilization by ethnicity. It should again be emphasized that the data presented in this table cannot be considered a representative sample of the patient population in this study due to its initial incomplete documentation. It is not known why this item was not completely recorded; perhaps the registration clerks felt uncomfortable questioning patients as to their exact ethnicity or thought that it was unimportant information to obtain. The registration clerks are responsible for recording this demographic data.

Language

Language spoken by the emergency department patient was readily identifiable. The county hospital maintains a full compliment of interpreters. It was found that 79% of the patients spoke English, 15% Spanish, 2% Vietnamese, 2.5% were listed as "other," and 1.5% as "unknown."

Previous Emergency Department Visit

Data regarding previous emergency department visit were inadequately recorded. Previous emergency department visits were listed as positive for 211 patients, 44% of the population. Seventy or 15% of the patients had no

Table 5

Ethnicity of Sample Population (N = 217)

Ethnicity	Number	% of Total
Hispanic	106	49
Caucasian	66	30
Black	14	6
Vietnamese	14	6
Filipino	4	2
Indian	4	2
Iranian	4	2
Ethiopian	2	1
Cambodian	1	<1
Japanese	1	<1
Asian	1	<1
Total	217	

previous emergency department visit documented at the county hospital, and for 194 patients, 41% of the total population, there was no documentation regarding whether this was their first emergency department visit or a subsequent visit. Regarding the 211 patients with documented previous emergency department visits, 57 were Hispanic, 47 Caucasian, 79 of unknown ethnicity, and the remainder a mix of Black, Vietnamese, Indian, Iranian, Ethiopian, and Filipino. A total of 116 were male, 94 female, and 1 was unknown. There were 99 patients who were uninsured, 76 patients who were unemployed, and a total of 40 patients who were both uninsured and unemployed. A total of 159 patients lived in the same city as the emergency department. This would concur with Ullman, Block, and Stratmann (1975) who found a large number of "high frequency" users to be Black (nonwhite), low-income (unemployed), and living in inner-city areas (residing near the emergency department). Gibson (1978) found similar results.

City of Residence

City of residence was established for all but 8.2% of the patient population. Additionally, there was a category designated "other" that comprised only 18 patients (3.8% of the total patient population). The "other" category was utilized to document patients residing outside of the immediate surrounding area. A total of 16 different local cities were documented. The county hospital is located in a city of 800,000. Residents of the city accounted for 74% of the patient population utilizing the emergency department. This would concur with a study done by Ullman, Block, and Stratmann (1975) that reported "high-frequency" emergency department users to be from inner-city areas immediately surrounding the emergency department, and with a study of Davidsons' (1978)

who found multiple users living closer to the hospital. The next two closest cities to the county hospital had 26 residents (6% of the total patient population) and 13 residents (3% of the total patient population) documented as utilizing the emergency department. It should be noted that this was a county hospital, and patients without insurance are specifically directed and/or brought to this facility.

Insurance Status:

As is prevalent with other studies concerning this issue, the largest single category of patients utilizing the emergency department were uninsured. Sixty two percent of the patients (237 in number) were uninsured (see Table 6). Of these patients, 128 uninsured patients (54%) utilized the emergency department inappropriately, and 109 uninsured patients (46%) utilized the emergency department appropriately. Again, it should be reiterated that this was a county hospital, and patients without insurance are specifically directed and/or brought to this facility.

Employment Status

The findings of this study documented that a large number of unemployed patients utilized the emergency department. They accounted for 36% of the patient population (see Table 7). Other employment status was further categorized by this emergency department as: (a) patients who were minors (under 18 years of age), (b) patients who were retired (based solely upon questioning of the patient at the registration desk), and (c) patients who were disabled (again based solely upon questioning of the patient at the registration desk). These three additional categories were related to potential insurance benefits. A total of 53 minors were seen in the emergency department; 49% presented appropriately. There were 40 retired patients documented; 60%

Table 6

Insurance Status of the Sample Population (N = 380)

Insurance Status	Number	% of Total
Unsponsored	237	62
Medi-Cal	78	21
Medi-Cal pending	28	7
Medi-Care and Medi-Cal	25	7
Medi-Care	8	2
Health Plan	4	1
Total	380	100

Table 7

Appropriate versus Inappropriate Emergency Department utilization as presented by Employment Status(N = 267)

Status	Appropriate	Inappropriate	Total Number	% Appropriate
Unemployed	89	83	172	52
Employed	43	52	95	45

utilizing the emergency department appropriately. Disabled patients accounted for 12 total patients; 83% utilized the emergency department appropriately. Data were documented for 372 of the total 475 patients.

Profile of the Emergency Department Patient

An overall patient profile was determined. The typical patient was English-speaking (79%, N = 475); Hispanic (49%, N = 217); male (54%, N = 473); and aged 21-50 years (64%, N = 473). He arrived by automobile (69%, N = 446) and was likely to have a medical complaint of pain (abdominal, extremity, head, or chest, 41%, N = 325). The patient had prior visits to the emergency department (73%, N = 287); was unemployed (46%, N = 372); uninsured (62%, N = 380); and resided in the same city as the emergency department (74%, N = 436).

Appropriate and Inappropriate Utilization of the Emergency Department

A total of 247 patients (52%) did utilize the emergency department appropriately. As noted in Table 8, 98% of the patients considered emergent utilized the emergency department appropriately. The singular emergent patient who utilized the emergency department inappropriately was a young Hispanic male who arrived by ambulance with a complaint of weakness. After an extensive and lengthy emergency department evaluation, the patient was found to have a urinary tract infection and a psychiatric history. Additionally, 98% of the patients considered urgent also utilized the emergency department appropriately. The two urgent patients who utilized the emergency department inappropriately had both presented with complaints of chest pain, clearly noncardiac by history. One was discharged with a diagnosis of "alcohol intoxication"; and the second with "chest pain, unlikely cardiac etiology."

Table 8

Overall Appropriate Versus Inappropriate Emergency Department Utilization as Presented by the Categories of Emergent, Urgent and Nonurgent (N = 475)

Status	Number Appropriate	% Appropriate	Number Inappropriate	% Inappropriate	Total
Emergent	61	98	1	2	62
Urgent	182	98	2	2	184
Nonurgent	4	2	225	98	229

Concerning the nonurgent patients, only 1.7% (4 total patients) utilized the emergency department appropriately. In reviewing the records, it was found that these 4 patients were all custody patients, brought to the emergency department by police. They were all young males who either had fractures from an assault-like altercation or had suturable self-inflicted lacerations and were subsequently transferred to a psychiatric facility.

In summary, the researcher concluded that 52% of the patient population studied utilized the emergency department appropriately, whereas 48% of the patient population utilized the emergency department inappropriately. Additionally, an overall patient profile was determined and presented.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

This study was a review of the charts of 475 patients who utilized a county hospital's emergency department/trauma center. The sample for this study were patients seen in the emergency department on selected Mondays during the months of May, June, and July, 1990. The overall study problem was to determine whether the county hospital's emergency department/trauma center was utilized appropriately or inappropriately as determined by the criteria for emergent, urgent, and nonurgent conditions. Additionally, demographic data were collected to determine the profiles of patients utilizing the emergency department.

Scope and Limitations

Several potential limitations existed regarding this retrospective study; they were:

1. The sample size was a small segment of the population utilizing this emergency department; therefore, no broad generalizations may be made from this study to the larger population.

2. Nurses were not formally instructed in this emergency department concerning the triage system. This presented an uncontrolled variable of undetermined magnitude since nurses routinely triage patients into categories of emergent, urgent, and nonurgent based on personal judgment.

3. The actual collection of data may have been inaccurate as a percentage of the patients interviewed in the emergency department were non-English speaking; therefore, the data recorded may have not been reported accurately concerning the patient's true problem.

4. Quality of record keeping may have been inaccurate related to the large numbers of patients seen in this emergency department . It could be expected that data may have been erroneously entered, deleted, or missing.

5. There were no data recorded or collected regarding the reason inappropriate patients utilized the emergency department.

6. As the researcher was also an employee of the emergency department at the time of data collection, it was possible that researcher bias may have been an issue.

Conclusions

The researcher concluded that 52% of the patient population studied utilized the emergency department appropriately, whereas 48% of the patient population utilized the emergency department inappropriately. These findings are consistent with some previous studies of emergency department utilization, verifying that approximately half of all emergency department visits are for nonurgent conditions, Berman and Luck, 1971, 55%, and Jacoby and Jones, 1982, 58%. Other studies found the inappropriate utilization of the emergency department to be much higher, Jacobs, Gavett, and Wersinger, 1971, 65%; Kluge, Wegryn, and Lemley, 1965, 66%, and Powers, Reichelt, and Jalowiec, 1983, 70-85%. Jonas (1977) found the categorical patient distribution in the emergency department to be 5% emergent, 45% urgent, and 50% nonurgent. This study found categorical patient distribution to be 13% emergent, 39% urgent, and 48% nonurgent.

The statistical analysis of data concerning this patient population may have been skewed because this emergency department was associated with a walk-in clinic. The walk-in clinic was open from 0800 until 2200, 7-days-a-week. It

would seem reasonable to assume that patients seen in an emergency department associated with such a facility would be far more likely to be only those patients with emergent and urgent problems, leaving the nonurgent problems to be triaged to the walk-in clinic. This was not the case in this emergency department. There were an additional 588 patients seen in the walk-in clinic on the 6 Monday's studied, still almost 50% of the 475 patients (from a total patient population of 1,002) seen in the emergency department remained nonurgent. It is not known why these patients were not triaged to the walk-in clinic. Further study concerning this is recommended.

Following is a brief discussion of the demographic data and a comparison to other studies. The majority of patients utilizing the emergency department were between the ages of 21 to 50 years. This differs from a study done by Berman and Luck (1971) who found children and young adults (15 to 24 years) to be the most frequent users of the Sinai Hospital Emergency Department. Guterman, Franaszek, Murdy, and Gifford (1985) found that 48% of their 10,253 patients studied to be between the ages of 13 to 21 years, and Robinson and Klonoff (1967) found that one-quarter of all emergency department visits in the year studied were made by children and adolescents. Berman and Luck (1971) found that more than half of the visits to the emergency service were made by patients under the age of 25 years. There are some studies that concur with the data obtained in this study. Satin (1973) cited the median age of his study population to be 37 years. Worth and Hurst (1989) reported that almost 25% of their study group ($\underline{N}$ = 2,031) were between the ages of 20-29 years. The majority of literature seemed to point to an overall younger age group than

those found in this study. The researcher is unable to speculate regarding this issue and recommends further study.

The researcher found that the gender of patients utilizing the emergency department was almost equal, 256 men and 217 women. This would concur with other studies which were almost equally divided, Elliott and Vayda, 1978, 50-64% male; Ullman, Block, and Stratmann, 1975, 53% male, and Weinerman, Ratner, Robbins, and Lavenhar, 1966, 58% male. Additionally, the findings of this study were supportive of existing studies that patients utilizing emergency departments were generally found to be those living in close proximity to the hospital (Berman & Luck, 1971; Weinerman, Ratner, Robbins, & Lavenhar, 1966).

A small percentage (11%) of the patients seen in this emergency department were admitted to the hospital. The researcher found that a total of 109 patients (11%) of the original 1,002 patients seen on the six selected Monday's were admitted. This concurs with research done by Walker (1975) who found that 10% of emergency department visits resulted in hospitalization.

In conclusion, data collected in this study basically support data generated by other similar studies; 48% of the patients utilizing the county hospital's emergency department/trauma center presented with nonurgent problems, inappropriately utilizing this facility. In addition, this study's findings support the conceptual framework for the study. The variables on which this research was based were derived from those cited in the literature on the increased inappropriate utilization of the emergency department by the patient population for primary care. These variables were supported by this study.

Recommendations

Based on the data generated from this study, recommendations regarding health care services follow. These recommendations are divided into two categories, recommendations based on the findings of this study, and recommendations for future research.

Recommendations Based on the Findings of this Study

There are several issues specific to this study that warrant discussion. Of the patients utilizing the emergency department, 64% were in their middle years (21-50 years old). As stated previously, this differs from other studies, and further research regarding this differentiation is recommended. It might be hypothesized that patients in their "middle years" are also in their most productive years. They may be employed or caring for children at home and find it difficult to schedule an appointment with a physician, leaving the emergency department's convenient 24-hour availability a valid alternative for them. Additionally, and also related to their productivity/activity, they may be a group at risk for injuries related to on the job or recreational activities. Their presence in the emergency department may be warranted.

Those patients under 1 year of age utilized the emergency department inappropriately 89% of the time. The researcher was unable to determine from patient records if the majority of these patients were the first-born children to inexperienced parents or the children of parents who had not been adequately educated concerning benign childhood illnesses or other factors. Future research in this area is recommended.

Patients aged 81-90 years utilized the emergency department appropriately 100% of the time. Perhaps advancing age proves a reliable

predictor of a greater severity of illness, or maybe the elderly were reluctant to use the emergency department until they were very ill. This is an element that emergency departments should evaluate with some forethought as to how they are going to accommodate a potential increase in this patient population's utilization of the emergency department as the age stratification of our society changes, and we become an increasingly elderly America. The researcher recommends further study of the factors related to this finding.

Considering that the emergency department does not currently attempt to provide primary care, some ethical issues exist. Were those 48% of the patient population that utilized the emergency department inappropriately better or worse off after using the emergency department? This is certainly a researchable question. Their immediate physical needs were met (infection diagnosed, pain decreased), and they were subsequently discharged with medications (as necessary) and instructions to follow-up with the appropriate specialists in the community. Their complete needs as a patient attempting to receive primary care through an emergency department were not addressed. Health promotion and maintenance, continuity of care, referral, and follow-up care are the fundamental issues of primary care that are not currently incorporated into emergency department care.

Did the care of these 48% inappropriate emergency department users impact the care received by the 52% of the patient population that utilized the emergency department appropriately? Emergent and urgent patients were consistently seen prior to those patients presenting with nonurgent conditions. The researcher is otherwise unable to ascertain any further analysis of this problem specifically related to the data collected for this study. Hypothetically,

speculation could be made that any amount of time spent by a nurse away from an urgent or emergent patient to be with a nonurgent patient could be to the detriment of that urgent or emergent patient.

Finally, the emergency department needs to develop an adequate tool to facilitate the triage of their patients. The existing tool is lengthy, confusing, and incomplete, and is not an easy reference for the nurse at the triage desk, but is more an incomplete policy/protocol due to its length. Even when ample time was available to utilize the tool to attempt classification of patients into appropriate categories, this proved an impossible task. Revision of this tool for research purposes is recommended.

Recommendations for Future Research

As expected of a descriptive study, this study raised more questions than answers. Recommendations for future research based on this study follow.

Data could be collected regarding why the inappropriate 48% who used the emergency department did not have a primary care physician or why their primary care physician would not see them that day. Additionally, data concerning the relationship between physician practices when referring to the emergency department when not available and inappropriate utilization of the emergency department could be investigated.

Patient attitudes regarding emergency department utilization could be surveyed. The attitudes of patients are extremely complex, particularly concerning areas that affect choice and utilization of a health care facility. "Originally, economic reasons were thought to cause people not to use a service, now, it is generally accepted that social-psychological reasons are equally or more important " (Walker, 1975, p. 19). Related to this same topic, is

the question of why patients come to the emergency department. Guterman, Franaszek, Murdy, and Gifford (1985) found that 60% of their patient population studied came to the emergency department because they believed that they had an "emergency" problem.

Further evaluation of patients' insurance status may prove beneficial. Some insurance companies will pay for an emergency department visit and not the physician's office. This reinforces inappropriate utilization of the emergency department.

A cost benefit analysis for the 48% of the patient population who utilized the emergency department inappropriately could be completed. This would encompass both the patient and the community, time lost from work, cost of a physician office visit versus the cost of the emergency department visit, insurance money spent inappropriately on an emergency department visit as opposed to an office visit, and revenue lost through the emergency department through uncollected bills of uninsured patients.

Additionally, future studies could be directed towards answering the question of why the inappropriate 48% of patients seen in this emergency department were not triaged to the associated walk-in clinic that is open from 0800 until 2200, 7-days-a-week. For example, is there a problem at the initial triage encounter or perhaps with the tool that the nurses are using to triage. Finally, conducting a random sample of days and hours is recommended for future research.

Summary

There is an obvious, long-standing demand for emergency department services. Emergency departments offer several attractive incentives to the

patient population: (a) the convenience of 24-hour-service every day of the year, (b) no appointment necessary, (c) the wide range of services immediately available, (d) specialists are readily available, and (e) accessible care for the indigent and/or uninsured patient. Initial studies concerning emergency department utilization began in 1958; numerous programs to deter inappropriate utilization and further studies have followed. In spite of these programs and studies, inappropriate emergency department utilization has not only continued, but actually escalated. Whether it is equitable or even practical to expect emergency departments to take on the role of the primary care provider is questionable. Questionable or not, reality has dictated that emergency departments seem to have inherited the responsibility of being the sole provider of medical care to some patient populations.

Perhaps it is time for a study with a new direction, one that envisions the emergency department as what it has truly become, a facility where approximately half of the patients are routinely seen for nonurgent problems. Given the excellent record of well-staffed emergency departments in caring for true emergencies and the convenience they offer for routine problems, one might conclude as did this article, "perhaps we should stop asking why people come to an emergency department and instead ask why anyone gets his care anywhere else" (Schroeder, 1979, p. 68). Schroeder (1979) suggests that perhaps we should also recognize the emergency department as a potentially new alternative and effective provider of primary care as we know it today. Roth (1971) had the foresight to recommend over 20 years ago that "the use of the emergency department will become more routinized and the question of

whether a given patient should or should not have come will diminish in cogency" (p. 320).

The synopsis of this study is that over the last 30 years, a growing number of patients have elected to utilize the emergency department as their primary source of care despite the availability of alternative services. Since the emergency department is the chosen facility for a large number of patients with nonurgent conditions seeking care, the researcher advocates that some type of program be permanently instituted within emergency departments to ensure that both "appropriate" and "inappropriate" patients receive quality, primary care. After all these years of fighting inappropriate emergency department utilization, maybe the answer is simply not to fight it at all, but to provide the quality care that half of all patients using emergency departments are seeking. It would seem reasonable to make effective out-patient services a priority by meeting, rather than dictating, consumer's needs. Provider labeling of patients utilizing the emergency department for "inappropriate" conditions does little to alleviate a distinct deficiency in health care delivery. Programs should be instituted nationally to ensure that patients seeking quality primary care through emergency departments receive that care.

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APPENDIX A

Letter of Permission from the Medical Center

March 20, 1990

Dear :

Other then being an emergency department nurse in your employ, I am also a graduate student at San Jose State University. I have recently completed all required class work and am initiating work on my thesis. The topic I have chosen to pursue is "Appropriate and Inappropriate Utilization of a County Hospital Emergency Department/Trauma Center." I am intending to gather data for my research through retrospective chart audits, necessitating no patient contact. Total patient anonymity will be rigorously maintained. I have attached a sample data collection form to familiarize you with the specific data I will be collecting.

I am asking your permission to gather this data through our emergency department. I will, subsequently, share any/all data generated from this research with you and the department. If you have any further questions, please feel free to contact me directly or my primary advisor, Dr. Emilie Musci, at (408)924-3152. Thank you for your time and consideration.

Sincerely,

Deanna M. Domeier

Approved____

Not Approved____

APPENDIX B

Letter of Permission from San Jose State University Human Subjects Institutional Review Board

SJSU SAN JOSE STATE UNIVERSITY

A campus of The California State University

Office of the Academic Vice President • Associate Academic Vice President • Graduate Studies and Research
One Washington Square • San Jose, California 95192-0025 • 408/924-2480

To: Deanna Mary Domeier, Nursing
582 Curie Drive
San Jose, CA, 95123

From: Charles R. Bolz
Office of Graduate Studies and Research

Date: June 7, 1990

As required by University policy, the Human Subjects Institutional Review Board has reviewed your proposed project entitled:

"Appropriate and Inappropriate Utilization of a County Emergency Department"

Because your project is to be limited to the collection of existing data that cannot be identified with human subjects, your project is exempt from further review. Therefore, you may proceed without further review by the Human Subjects Institutional Review Board.

I, however, do caution you that whenever people participate in your research as human subjects, they should be appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity with regard to any and all data that may be collected from the subjects. If at any time a subject becomes injured or complains of injury, you must notify Dr. Serena Stanford immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

Please also be advised when people participate in your research as human subjects, each subject needs to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate or withdrawal will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact Dr. Stanford or me at (408) 924-2480.

cc: Emilie C. Musci, Ph.D.

APPENDIX C

Data Collection Form

DATA COLLECTION SET #____

DATE_____ PT # _____

1. CLASSIFICATION OF CARE: Emergent Urgent Nonurgent

2. CATEGORY OF CARE: Appropriate Inappropriate

3. MODE OF ARRIVAL: Ambulance Auto Bus Custody EPS
   Taxi Walked Unknown
4. MEDICAL COMPLAINT: X
   Vital Signs:
5. AGE:
6. SEX: Male Female
7. ETHNICITY:
8. LANGUAGE:
9. MEDICAL HISTORY:
10. SERVICES RENDERED:
11. MD DIAGNOSIS:
12. TOTAL ED TIME:
13. CHART AVAILABLE: Yes No
14. PREVIOUS ED VISIT: Yes No Unknown
15. CITY OF RESIDENCE:
16. INSURANCE STATUS:
17. EMPLOYMENT STATUS: Employed Unemployed Disabled
    Minor Retired Unknown

Coded Data Collection Form

1. Classification of Care	1 = Emergent
	2 = Urgent
	3 = Nonurgent
2. Category of Care	1 = Appropriate
	2 = Inappropriate
3. Mode of Arrival	0 = Information not available
	1 = Ambulance
	2 = Automobile
	3 = Bus
	4 = Custody
	5 = Emergency Psychiatric Services
	6 = Taxi
	7 = Walked
4. Medical Complaint	0 = Information not available
5. Age	0 = Information not available
	1 = <1 year
	2 = 1-10 years
	3 = 11-20 years
	4 = 21-30 years
	5 = 31-40 years
	6 = 41-50 years
	7 = 51-60 years
	8 = 61-70 years
	9 = 71-80 years
	10=81-90 years
	11=91+ years
6. Sex	0 = Information not available
	1 = Male
	2 = Female
7. Ethnicity	0 = Information not available

	1 = Black
	2 = Cambodian
	3 = Caucasian
	4 = Ethiopian
	5 = Filipino
	6 = Hispanic
	7 = Iranian
	8 = Japanese
	9 = Oriental
	10= Vietnamese
8. Language	0 = Information not available
	1 = English
	2 = Spanish
	3 = Vietnamese
	4 = Other NonEnglish
9. Medical History	0 = Information not available
10. Services Rendered	0 = Information not available
	1 = Admission
	2 = Consult
	3 = Laboratory
	4 = MD only
	5 = Medication
	6 = Referral
	7 = X-ray
11. Total ED Time	0 = Information not available
	1 = 0-2 hours
	2 = 2-4 hours
	3 = 4-6 hours
	4 = 6-8 hours
	5 = 8-10 hours
	6 =10-12 hours
	7 = 12+ hours
12. Previous ED Visit	0 = Information not available
	1 = Yes

	2 = No
13.Chart Available	0 = Information not available
	1 = Yes
	2 = No
14. City of Residence	0 = Information not available
	1 = Alviso
	2 = Campbell
	3 = Cupertino
	4 = Fremont
	5 = Gilroy
	6 = Los Altos
	7 = Los Gatos
	8 = Milpitas
	9 = Morgan Hill
	10=Mountain View
	11=Other
	12=Palo Alto
	13=San Jose
	14=San Martin
	15=Santa Clara
	16=Santa Cruz
	17=Saratoga
	18=Sunnyvale
	19=Transient
15. Insurance	0 = Information not available
	1 = A, Jail/Custody
	2 = C, Medi-Cal
	3 = F, APD
	4 = H, Health Plan (Kaiser, Lifeguard)
	5 = J, Juvenile Custody
	6 = M, Medi-Care
	7 = P, Sexual Assault
	8 = U, Unsponsored
	9 = X, Medi-Cal and Medi-Care

	10=Z, Medi-Cal pending
16 Employment Status	0 = Information not available
	1 = Employed
	2 = Unemployed
	3 = Disabled
	4 = Minor
	5 = Retired

APPENDIX D

Emergency Department's Priority Classifications

GUIDELINES FOR TRIAGE

A. Guidelines For Emergency Department Patients:

1. Abnormal vital signs:
   a. Systolic BP below 85/above 200
   b. Diastolic BP below 50/above 110
   c. Pulse below 50/above 130, all irregular pulses
   d. Respirations below 10/above 30
   e. Temperature below 97 F/above 103 F
2. Ingestions or attempted suicides
3. Severe chest or abdominal pain
4. Acute medical emergencies:
   a. Cardiac or respiratory difficulty
   b. Bleeding; external or internal
   c. Bowel or urinary distress
   d. Impending delirium tremors
   e. Recent seizures
5. Burns
6. Chemical exposure
7. Lacerations requiring suturing
8. Police cases:
   a. Custody
   b. Assault determinations/physical and sexual
   c. Battered children (pediatric clinic during applicable hours)
9. Hemorrhage
10. Trauma

B. Guidelines For Walk-In Patients:

1. All suture removals
2. Ambulatory patients with chronic, minor, or vague complaints not requiring an extensive work-up
3. Dressing changes, wound checks
4. Medication refills
5. Minor lacerations not requiring suturing
6. Uncomplicated pediatric patients

C. Patients Not Appropriate For Walk-In:

1. Chronic low grade fever (<102) lasting longer than one week
2. All abdominal pain
3. Dizziness/weakness
4. Psychologically/chemically altered or disruptive patients
5. Diabetic patients with complications
6. Any headache with neurological symptoms, new onset or migraine
7. Visual loss, foreign body in eye, or eye trauma
8. Seizure medication refills if off medications or recent seizure

9. Patients over 65 with any problem other than an upper respiratory infection or medication refill
10. Young females with abdominal pain who could be pregnant
11. Patients in a wheelchair, using a walker, or on crutches
12. Potential orthopedic patients (sprains, strains, fractures)
13. Any febrile infant <3 months of age
14. Traumatic extremity injuries

1. Abdominal Pain
   Emergent
   a. Protracted vomiting
   b. Active gastrointestinal bleed
   c. Pallor, diaphoresis with abnormal vital signs
   d. Fainting with abnormal vital signs
   e. Severe pain
   f. Hypotensive
   g. Vaginal bleeding with abnormal vital signs
   h. Pain radiating to shoulder or chest
   Urgent
   a. Evidence of coffee ground emesis or apparent blood in emesis
   b. Fainting with normal vital signs
   c. Elderly age group
   d. Abdominal distention
   e. Vaginal bleeding with normal vital signs

2. Addicts
   Emergent
   a. Behavior problem
   Urgent
   a. Abdominal cramps
   b. Diaphoresis
   c. Tremors
   d. Agitation
   Nonurgent
   a. Other medical problems

3. Alcoholics
   Emergent
   a. In delirium tremors or impending deliruim tremors (tremulousness, diaphoresis, hallucinations, seizure movements, or known history of seizures)
   Nonurgent
   a. If stable

4. Allergic Reactions
   Determine:
   a. Patient's opinion on cause

b. If on any medication
c. If exposed to anything different or unusual
d. Known allergies

Emergent

a. Respiratory problems
b. Unusual behavior

5. Backache

Emergent

a. Severe disabling pain
b. Associated numbness, tingling, weakness or coldness of extremity
c. Bowel or bladder dysfunction
d. Inability to walk

6. Chest pain

Emergent

a. Radiation
b. Palpitations
c. Pain; tight, crushing, squeezing, or substernal
d. Weakness
e. Hemoptysis
f. Pallor
g. Cyanosis
h. Cardiac history
i. Respiratory difficulty
j. Nausea
k. Diaphoresis

7. Epistaxis

Emergent

a. Active bleeding

Urgent

a. Excessive swallowing, possible vomiting of blood

8. Fainting

Emergent

a. Head trauma
b. Seizures
c. Altered level of consciousness
d. Extreme pain

9. Headache

Emergent

a. Seizure
b. Ataxia
c. Incapacitating
d. Weakness or paralysis

e. Fever, stiff neck
f. Vomiting
g. Visual changes
h. History of head trauma

Urgent

a. History of migraine

10. Head Injury

Emergent

a. Respiratory distress
b. Unconsciousness of arrival
c. Seizures or seizure just prior to arrival
d. Vomiting
e. Unequal pupils or abnormal neurological signs

11. Obstetrics/Gynecology

Determine:

a. Last normal menstrual period and regularity of menses
b. Presence of discharge or bleeding, clots
c. Amount of bleeding (how many pads)
d. Fainting
e. Abdominal pain
f. Use of birth control
g. Triage directly to labor and delivery if in active labor and over 5 months gestation (20 weeks) or having pregnancy related problems, or having non-acute medical problems for clearance and release to emergency department for treatment. If any questions regarding the obstetrical patient call labor and delivery, #5407/5408

12. Respiratory Disorders

Emergent

a. Acute distress
b. Dyspneic, diaphoretic
c. Drooling, inability to swallow (suspect epiglottis, no oral temperature)
d. Pale or cyanotic
e. Exhaustion or retractions
f. Wheezing or stridor
g. Foreign bodies
h. Flaring nares

Urgent

a. Peritonsilar abcess as occlusion can occur

13. Seizure

Determine:

a. Previous history of seizure
b. Medication compliance

c. Recent head injury
d. High fever
e. Any infectious process
f. History of alcoholism or diabetes

Emergent

a. Active seizure state
b. Immediate post-seizure state

14. Sexual assault
Contact police and the sexual assault response team

15. Trauma
Triage all trauma to the emergency department

16. Psychiatric
May go directly to emergency psychiatric services if no physical complaints
To be seen in emergency department if danger to self or others, incapacitated or possible ingestion

17. Wounds

Emergent

a. Acute burns
b. Wounds requiring suturing
c. Suspected fractures
d. Grossly infected wounds

APPENDIX E

Priority Classifications

Emergent

1. Airway/Breathing/Circulation; conditions that actually, or potentially obstruct the airway, breathing, or circulation:
   a. Cardiac arrest/chest pain
   b. Drug overdose
   a. Hemorrhage
   a. Near drowning
   c. Respiratory arrest/severe respiratory distress
   d. Severe burns
   a. Shock
   e. Status epilepticus
   f. Trauma
2. Chemical exposure
3. Pain; dependent on the severity, location, duration, and physical appearance of the patient.
4. Unstable vital signs

Urgent

1. Altered mental status
2 Bleeding that is temporarily controlled
3. Current complaint complicated by extensive medical history
4. Lacerations requiring suturing
5. Obvious orthopedic fractures
6. Pain; dependent on the severity, location, duration, and physical appearance of the patient.
7. Post ictal

Nonurgent

1. Chronic ailments
2. Clearance for detoxification centers
3. Custody clearance
4. Medication refills
5. Minor lacerations not requiring suturing
6. Minor medical complaints; cold symptoms, rash, ear aches, low grade fevers, and sexually transmitted diseases
7. Suture removals, dressing changes, wound checks